

## The Deletion of *Vittaria graminifolia* from the Flora of Florida

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Interest in new state and national records, range extensions, and the status of rare or endangered species of ferns is probably nowhere more keen than in Florida. Critical field and herbarium work to upgrade our knowledge of the distribution and habitat requirements of ferns, especially in the subtropical southern region of the state, assumes political as well as scientific significance at a time when state and federal socio-economic decisions are influenced by the ecological status of species as humble as a lousewort or a snail darter. Efforts to increase the accuracy of our floristic records for Florida ferns have been quite evident in recent years, for example in the work of Messler (1974), Evans (1975), Ward and Hall (1976), Nauman and Austin (1978), Nauman (1978), Austin et al. (1979), Adams and Tomlinson (1979), and Nauman (1979a, 1979b). Such efforts, however, must include the deletion of erroneous records as well as the addition of new records. The deletion of one such erroneous record, the natural occurrence of *Vittaria graminifolia* Kaulf. in Collier County, Florida, is the subject of this report.

The belief that *V. graminifolia* occurs in Collier County, Florida, its only reported occurrence in the United States, is based on a statement appended to the discussion of *V. lineata* (L.) J. E. Smith in Wherry's (1964) Southern Fern Guide. Wherry stated that *V. filifolia* Fée was found in 1960 in Collier County, and he distinguished it from *V. lineata* by the weak iridescence and width of its scales. In another context, Tryon (1964a) showed that *V. filifolia* is an incorrect name for this species and that its correct name is *V. graminifolia*.

In an effort to bring cytological evidence to bear on the identity of the Appalachian gametophyte by counting its chromosomes and those of *V. lineata* and *V. graminifolia* (Gastony, 1977), I undertook a search for *V. graminifolia* in Collier County. Dr. Wherry responded to my request for more information relating to his 1964 report by noting (in litt., 15 Aug 1976) that at the age of ninety and a half he was no longer able to recall more specific locality data or whether an herbarium voucher documented his report. He did recall, however, that he had visited the living fern collection assembled by John Beckner in St. Petersburg, Florida and that Beckner had there "two *Vittarias*," one less winter hardy than the other. The less hardy one from Collier County was what Dr. Wherry took to be *V. graminifolia* (as *V. filifolia*).

Wherry's information enabled me to contact John Beckner, who agreed to take me to the site from which he had collected the *Vittaria* in question. In the company of Dr. Michael Madison of the Selby Botanical Garden and several others, we explored the swampy locality west of Copeland and Deep Lake where Beckner clearly remembered having made the original collection, and we eventually found several specimens of what Beckner said was *V. graminifolia* if anything in that

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area was. These were immature, somewhat depauperate specimens epiphytic on the trunk of *Persea palustris*, unlike the usual *Sabal palmetto* epiphytism of *V. lineata*. They were not fertile and did not survive cultivation efforts in the Indiana University greenhouses.

Beckner was certain, however, that Wherry had taken a specimen of his original collection back to Pennsylvania and that a voucher specimen documenting Wherry's (1964) statement was to be found there. Subsequent inquiries led to a specimen (number 0925236) at the herbarium of the Academy of Natural Sciences in Philadelphia (PH) bearing the stamp of the herbarium of the University of Pennsylvania, which is on permanent loan to PH. The label identifies the specimen as *Vittaria filifolia* Fée and indicates that it had been cultivated from a plant collected by John Beckner west of Deep Lake in Collier County, Florida. The specimen was made on 3 January 1962, and has been annotated by Dr. Wherry as *V. filifolia*. Beckner (pers. comm.) has since assured me that the locality from which this specimen was taken is identical to the swampy locality we had visited west of Copeland and Deep Lake. On 4 January 1980, I returned to this site and established in a discussion there with Park Ranger Robert Goble that this locality is in the center of what is now the Fakahatchee Strand State Preserve protected by the Department of Natural Resources of the State of Florida.

I have analysed Wherry's specimen from PH, utilizing the characters employed by Tryon (1964b, pp. 212–215) in distinguishing *V. lineata* and *V. graminifolia* in the Ferns of Peru. Comparable or identical characters are used by Lellinger (pers. comm.) and by Stolze (pers. comm.) in distinguishing these species in their forthcoming treatments of the ferns of Costa Rica, Panama, and the Chocó and the ferns of Guatemala, respectively. Perhaps the most absolute criterion employed in the discriminatory sets of characters used in these three major floristic treatments is the incidence of tetrahedral-globose, trilete spores in *V. graminifolia*, as opposed to reniform, monolete spores in *V. lineata*. In this regard and in the other characters examined, the specimen upon which the record of *V. graminifolia* in Florida rests is surely *V. lineata*. I sent Beckner a photocopy of Wherry's herbarium specimen and he is certain (pers. comm.) that this specimen is the basis of Wherry's (1964) report.

It is interesting that Lakela and Craighead (1965), Long and Lakela (1971), and Lakela and Long (1976) discussed *V. lineata* in their treatments of the ferns of south Florida but made no reference whatever to *V. filifolia* or *V. graminifolia*. The reason for omitting *V. graminifolia* from these three works is unknown and is particularly curious since the work by Long and Lakela (1971) does cite Wherry's book (1964) as a selected reference on the ferns of Florida. Long is deceased and Craighead (pers. comm.) says that the decision as to what to include in their checklist was entirely that of Lakela. Lakela, now in retirement, does not recall the reason for this omission from any of these works (pers. comm.). There is no indication that any of these authors ever consulted the specimen at PH. Based on my experience with Beckner in revisiting the collection site of Wherry's specimen in the Fakahatchee Strand, I suspect that the difference in the cold-hardiness of the "two *Vittarias*" was most likely due to the sub-optimal substrate of the

hardwood host tree and perhaps to a variant allelic constitution correlated with the occurrence of these individuals on this unusual host.

It is always possible that *V. graminifolia* or any other species common in tropical America may be carried into southern Florida by hurricane winds or other means of dispersal and that such adventives may become temporarily or permanently established in subtropical Florida. Because of Wherry's report, Austin and Nauman (pers. comm.) have searched extensively for *V. graminifolia* in the Fakahatchee Strand but have never found it and have concluded that it is not there. Critical examination of the morphology and ecology of the specimen discussed above indicates that there is no longer any reason to believe that *V. graminifolia* ever did or does now occur in Florida. It should therefore be deleted from the floristic record for Florida and thus from the flora of the United States.

I am grateful to Ross and Priscilla Stanley of Port Charlotte, Florida for their hospitality during the field work and manuscript preparation for this paper and to John Beckner for his aid in the field and in locating the specimen upon which Dr. Wherry's report was based. I thank Dr. Michael Madison for help in the field, Dr. Wherry for help in interpreting his report, the officers of the herbarium of the Academy of Natural Sciences (PH) for the loan of the specimen discussed, and Ranger Robert Gobel for aid in interpreting the specimen locality data in terms of the Fakahatchee Strand.

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